

ABSTRACT OF THE DISCLOSURE

A nanodiamond tool, including a mass of sintered nanodiamond particles can be produced having improved mechanical, thermal, and electrical properties. The sintered mass can contain greater than about 95% by volume nanodiamond and greater than
5 about 98% by volume carbon. Such nanodiamond tools can be formed by assembling a mass of nanodiamond particles and sintering the mass of nanodiamond particles to form a sintered mass. Prior to sintering, the mass of nanodiamond particles can be substantially free of non-carbon materials such as metal binders, sintering aids or the like. Upon sintering, the nanodiamond particles sinter together at high pressures and
10 lower temperatures than those typically required in producing polycrystalline diamond compacts with diamond crystals of a larger size. The absence of non-carbon materials improves the high temperature performance and reliability of the nanodiamond tools of the present invention.

15

20